

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Chew, Anne; Denton, R. Rex; Bieglecki, Karyn; Nandabalan, Krishnan; and Stephens, Joel Claiborne

Title: Haplotypes of the TNFRSF11B Gene

Application No.: To be assigned

Group No.: 1632

Filed: 9 January 2002

Examiner: Joseph Woitach

For: Haplotypes of the TNFRSF11B Gene

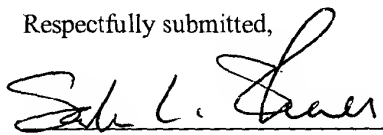
Assistant Commissioner for Patents
Patent and Trademark Office
Washington, D.C. 20231

STATEMENT ACCOMPANYING "SEQUENCE LISTING"
(37 C.F.R. 1.821 (f))

The undersigned hereby states upon information and belief that the information recorded in the computer readable form of the sequence listing is identical to the written (paper) sequence listing submitted with the application.

Respectfully submitted,

9-January-2002
Date


Sandra L. Shaner
Registration Number: 47,934
Genaissance Pharmaceuticals, Inc.
Five Science Park
New Haven, CT 06511
USA
Tel. No. 203-786-3468

POLYMORPHISMS IN THE TNFRSF11B GENE

ACAGCGAACC	CTAGAGCAAA	GTGCCAAACT	TCTGTCGATA	GCTTGAGGCT	
AGTGGAAGA	CCTCGAGGAG	GCTACTCCAG	AAGTTCAGCG	CGTAGGAAGC	100
TCCGATACCA	ATAGCCCTTT	GATGATGGTG	GGGTTGGTGA	AGGGAACAGT	
GCTCCGCAAG	GTTATCCCTG	CCCAGGCAG	TCCAATTTTC	ACTCTGCAGA	200
TTCTCTCTGG	CTCTAACTAC	CCCAGATAAC	AAGGAGTGAA	TGCAGAATAG	
CACGGGCTTT	AGGGCCAATC	AGACATTAGT	TAGAAAAATT	CCTACTACAT	300
GGTTTATGTA	AACCTGAAGA	TGAATGATTG	CGAACTCCCC	GAAAAGGGCT	
CAGACAATGC	CATGCATAAA	GAGGGGCCCT	GTAATTTGAG	GTTTCAGAAC	400
CCGAAGTGAA	GGGGTCAGGC	AGCCGGGTAC	GGCGGAAACT	CACAGCTTTC	
GCCCAGCGAG	AGGACAAAGG	TCTGGGACAC	ACTCCAACCTG	CGTCCGGATC	500
TTGGCTGGAT	CGGACTCTCA	GGGTGGAGGA	GACACAAGCA	CAGCAGCTGC	
T					
CCAGCGTGTG	CCCAGCCCTC	CCACCGCTGG	TCCCGGCTGC	CAGGAGGCTG	600
GCCGCTGGCG	GGAAGGGGCC	GGGAAACCTC	AGAGCCCCGC	GGAGACAGCA	
GCGCCTTGT	TCCTCAGCCC	GGTGGCTTTT	TTTTCCCCTG	CTCTCCCAGG	700
GGACAGACAC	CACCGCCCCA	CCCTCACGC	CCCACCTCCC	TGGGGGATCC	
	T			T	
TTTCCGCCCC	AGCCCTGAAA	GCGTTAATCC	TGGAGCTTTC	TGCACACCCC	800
	C				
CCGACCGCTC	CCGCCCAAGC	TTCTAAAAA	AGAAAGGTGC	AAAGTTTGGT	
CCAGGATAGA	AAAATGACTG	ATCAAAGGCA	GGCGATACTT	CCTGTTGCCG	900
GGACGCTATA	TATAAOGTGA	TGAGGCGACG	GGCTGCGGAG	ACGCACCGGA	
GCGCTCGCCC	AGCCGCCGCC	TCCAAGCCCC	TGAGGTTTCC	GGGGACCACA	1000
ATGAACAAGT	TGCTGTGCTG	CGCGCTCGTG	GTAAGTCCCT	GGGCCAGCCG	
C				T	
[exon 1: 1001..					
..1030]					
ACGGGTGCCC	GGCGCCTGGG	GAGGCTGCTG	CCACCTGGTC	TCCCAACCTC	1100
CCAGCGGACC	GGCGGGGAGA	AGGCTCCACT	CGCTCCCTCC	CAGGAGAGGC	
	A				
TTGGGGTTAG	GCTGGAGCAG	GAAACCGCTT	TCAAGTTATG	CCATGCTTCC	1200
CCTAGGGTGT	CCTTTTACGC	TGCAAAGTTC	CTGCTGACTT	TATGGAAGAC	
	A				
AGCAAGAGAG	AGACAGACAG	CGAGAGAGAG	GGAGAGAGAG	AGAGAGAGAA	1300
ACTTGTTTGA	AAGTTTTAGT	CATTAACCTT	CTGTCTTCAT	CTCAGAATAT	
TAACGCCCTC	ATGTAGTCCA	TACTATCTTT	GCTTAATGAA	CTTGAACCTT	1400
TATTATTAGT	GGCAAAGAAG	TGGTCCCTTA	GATTCAGAGT	AAGTTGGAAG	
AAGACGTTAG	TCTTCTTAAA	ACCATTATAA	TTAGAATATG	ACATGATAGA	1500
NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	
CAGGACTTTG	AGTCAAATGA	TACTGTTGCA	CATAAGAACA	AACCTATTTT	1600
CATGCTAAGA	TGATGCCACT	GTGTTCCCTT	CTCCTTCTAG	TTTCTGGACA	
[exon 2: 1641..					
TCTCCATTAA	GTGGACCACC	CAGGAAACGT	TTCTCCAAA	GTACCTTCAT	1700
TATGACGAAG	AAACCTCTCA	TCAGCTGTTG	TGTGACAAAT	GTCCTCCTGG	
TACCTACCTA	AAACAACACT	GTACAGCAAA	GTGGAAGACC	GTGTGCGCCC	1800
CTTGCCCTGA	CCACTACTAC	ACAGACAGCT	GGCACACCAG	TGACGAGTGT	
CTATACTGCA	GCCCCGTGTG	CAAGGAGCTG	CAGTACGTCA	AGCAGGAGTG	1900
CAATCGCACC	CACAACCGCG	TGTGCGAATG	CAAGGAAGGG	CGCTACCTTG	
AGATAGAGTT	CTGCTTGAAA	CATAGGAGCT	GCCCTCCTGG	ATTTGGAGTG	2000
GTGCAAGCTG	GTACGTGTCA	ATGTGCAGCA	AAATTAATTA	GGATCATGCA	
	T				
..2010]					

FIGURE 1A

2004-05-24 10:00:02

2/7					
AAGTCAGATA	GTTGTGACAG	TTTAGGAGAA	CACTTTTGTT	CTGATGACAT	2100
TATAGGATAG	CAAATTGCAA	AGGTAATGAA	ACCTGCCAGG	TAGGTACTAT	
GTGCTGGAG	TGCTTCCAAA	GGACCATTGC	TCAGAGGAAT	ACTTTGCCAC	2200
C					
TACAGGGCAA	TTTAATGACA	AATCTCAAAT	GCAGCAAATT	ATTCTCTCAT	
GAGATGCATG	ATGGTTTTTT	TTTTTTTTTT	TAAAGAAACA	AACTCAAGTT	2300
GCACTATTGA	TAGTTGATCT	ATACCTCTAT	ATTCACTTC	AGCATGGACA	
CCTTCAAAC	GCAGCACTTT	TTGACAAACA	TCAGAAATGT	TAATTTATAC	2400
CAAGAGAGTA	ATTATGCTCA	TATTAATGAG	ACTCTGGAGT	GCTAACAATA	
AGCAGTTATA	ATTAATTATG	TAAAAAATGA	GAATGGTGAG	GGGAATTGCA	2500
TTTCATTATT	AAAAACAAGG	CTAGTTCTTC	CTTTAGCATG	GGAGCTGAGT	
GTTTGGGAGG	GTAAGGACTA	TAGCAGAATC	TCTTCAATGA	GCTTATTCTT	2600
TATCTTAGAC	AAAACAGATT	GTCAAGCCAA	GAGCAAGCAC	TTGCCTATAA	
ACCAAGTGCT	TTCTCTTTTG	CATTTTGAAC	AGCATTGGTC	AGGGCTCATG	2700
TGTATTGAAT	CTTTTAAACC	AGTAACCCAC	GTTTTTTTTC	TGCCACATTT	
GCGAAGCTTC	AGTGCAGCCT	ATAACTTTTC	ATAGCTTGAG	AAAATTAAGA	2800
GTATCCACTT	ACTTAGATGG	AAGAAGTAAT	CAGTATAGAT	TCTGATGACT	
CAGTTTGAAG	CAGTGTCTCT	CAACTGAAGC	CCTGCTGATA	TTTTAAGAAA	2900
TATCTGGATT	CCTAGGCTGG	ACTCCTTTTT	GTGGGCAGCT	GTCCTGCGCA	
TTGTAGAATT	TTGGCAGCAC	CCCTGGACTC	TAGCCACTAG	ATACCAATAG	3000
CAGTCCTTCC	CCCATGTGAC	AGCCAAAAAT	GTCTTCAGAC	ACTGTCAAAT	
GTCGCCAGGT	GGCAAAATCA	CTCCTGGTTG	AGAACAGGGT	CATCAATGCT	3100
AAGTATCTGT	AACTATTTTA	ACTCTCAAAA	CTTGTGATAT	ACAAAGTCTA	
AATTATTAGA	CGACCAATAC	TTTAGGTTTA	AAGGCATACA	AATGAAACAT	3200
TCAAAAAATCA	AAATCTATTC	TGTTTCTCAA	ATAGTGAATC	TTATAAAATT	
AATCAGAGAA	GATGCAAATT	GCATCAGAGT	CCCTTAAAT	TCCTCTTCGT	3300
ATGAGTATTT	GAGGGAGGAA	TTGGTGATAG	TTCTTACTTT	CTATTGGATG	
GTAATTTGAG	ACTCAAAAGC	TAAGCTAAGT	TGTGTGTGTG	TCAGGGTGCG	3400
GGGTGTGGAA	TCCCATCAGA	TAAAAGCAAA	TCCATGTAAT	TCATTTCAGTA	
AGTTGTATAT	GTAGAAAAAT	GAAAAGTGGG	CTATGCAGCT	TGGAACTAG	3500
AGAATTTTGA	AAAATAATGG	AAATCACAAAG	GATCTTTCTT	AAATAAGTAA	
GAAAATCTGT	TTGTAGAATG	AAGCAAGCAG	GCAGCCAGAA	GAATCAGAAC	3600
AAAAGTACAC	ATTTTACTCT	GTGTACACTG	GCAGCACAGT	GGGATTTATT	
TACCTCTCCC	TCCCTAAAAA	CCCACACAGC	GGTTCTCTCT	GGGAAATAAG	3700
AGGTTTCCAG	CCCAAAGAGA	AGGAAAGACT	ATGTGGTGTT	ACTCTAAAAA	
GTATTTAATA	ACCGTTTTGT	TGTTGCTGTT	GCTGTTTTGA	AATCAGATTG	3800
TCTCCTCTCC	ATATTTTATT	TACTTCATTC	TGTTAATTC	TGTGGAATTA	
CTTAGAGCAA	GCATGGTGAA	TTCTCAACTG	TAAAGCCAAA	TTTCTCCATC	3900
ATTATAATTT	CACATTTTGC	CTGGCAGGTT	ATAATTTTTA	TATTTCCACT	
GATAGTAATA	AGGTAAATATC	ATTACTTAGA	TGGATAGATC	TTTTTCATAA	4000
AAAGTACCAT	CAGTTATAGA	GGGAAGTCAT	GTTTCATGTT	AGGAAGGTCA	
TTAGATAAAG	CTTCTGAATA	TATTATGAAA	CATTAGTTCT	GTCATTCTTA	4100
GATTCTTTTT	GTTAAATAAC	TTTAAAAGCT	AACTTACCTA	AAAGAAATAT	
CTGACACATA	TGAACCTCTC	ATTAGGATGC	AGGAGAAGAC	CCAAGCCACA	4200
GATATGTATC	TGAAGAATGA	ACAAGATTCT	TAGGCCCGGC	ACGGTGGCTC	
ACATCTGTAA	TCTCAAGAGT	TTGAGAGGTC	AAGGCGGGCA	GATCACCTGA	4300
GGTCAGGAGT	TCAAGACCAG	CCTGGCCAAC	ATGATGAAAC	CCTGCCTCTA	
CTAAAAATAC	AAAAATTAGC	AGGGCATGGT	GGTGCATGCC	TGCAACCTTA	4400
GCTACTCAGG	AGGCTGAGAC	AGGAGAATCT	CTTGAACCTT	CGAGGCGGAG	
GTTGTGGTGA	GCTGAGATCC	CTCTACTGCA	CTCCAGCCTG	GGTGACAGAG	4500
ATGAGACTCC	GTCCCTGCCG	CCGCCCCCGC	CTTCCCCCCC	AAAAAGATTTC	
TTCTTCATGC	AGAACATACG	GCAGTCAACA	AAGGGAGACC	TGGGTCCAGG	4600
TGTCCAAGTC	ACTTATTTTCG	AGTAAATTAG	CAATGAAAGA	ATGCCATGGA	
ATCCCTGCC	AAATACCTCT	GCTTATGATA	TTGTAGAATT	TGATATAGAG	4700

FIGURE 1B

3/7

TTGTATCCCA	TTTAAGGAGT	AGGATGTAGT	AGGAAAGTAC	TAAAAACAAA	
CACACAAACA	GAAAACCCTC	TTTGCTTTGT	AAGGTGGTTC	CTAAGATAAT	4800
GTCAGTGCAA	TGCTGGAAAT	AATATTTAAT	ATGTGAAGGT	TTTAGGCTGT	
GTTTTCCCT	CCTGTTCTTT	TTTTCTGCCA	GCCCTTTGTC	ATTTTTCAG	4900
GTCAATGAAT	CATGTAGAAA	GAGACAGGAG	ATGAAACTAG	AACCAGTCCA	
TTTTGCCCT	TTTTTTATTT	TCTGGTTTGT	GTAAGAGATA	CAATGAGGTA	5000
GGAGGTTGAG	ATTTATAAAT	GAAGTTTAAT	AAGTTTCTGT	AGCTTTGATT	
TTTCTCTTTC	ATATTTGTTA	TCTTGCAATA	GCCAGAAATTG	GCCTGTAAAA	5100
TCTACATATG	GATATTGAAG	TCTAAATCTG	TTCAACTAGC	TTACACTAGA	
TGGAGATATT	TTCATATTCA	GATACACTGG	AATGTATGAT	CTAGCCATGC	5200
GTAATATAGT	CAAGTGTTTG	AAGGTATTTA	TTTTTAATAG	CGTCTTTAGT	
TGTGGACTGG	TTCAAGTTTT	TCTGCCAATG	ATTCTTCAA	ATTTATCAAA	5300
TATTTTTTCCA	TCATGAAGTA	AAATGCCCTT	GCAGTCACCC	TTCTTGAAGT	
TTGAACGACT	CTGCTGTTTT	AAACAGTTTA	AGCAAATGGT	ATATCATCTT	5400
CCGTTTACTA	TGTAGCTTAA	CTGCAGGCTT	ACGCTTTTGA	GTCAGCGGCC	
AACTTTATTG	CCACCTTCAA	AAGTTTATTA	TAATGTTGTA	AATTTTACT	5500
TCTCAAGGTT	AGCATACTTA	GGAGTTGCTT	CACAATTAGG	ATTCAGGAAA	
GAAAGAAGTT	CAGTAGGAAC	TGATTGGAAT	TTAATGATGC	AGCATTCAT	5600
GGGTACTAAT	TTCAAAGAAT	GATATTACAG	CAGACACACA	GCAGTTATCT	
TGATTTTCTA	GGAATAATTG	TATGAAGAAT	ATGGCTGACA	ACACGGCCTT	5700
ACTGCCACTC	AGCGGAGGCT	GGACTAATGA	ACACCCTACC	CTTCTTTCTT	
TTCTCTCAC	ATTTTCATGAG	CGTTTTGTAG	GTAACGAGAA	AATTGACTTG	5800
CATTTGCATT	ACAAGGAGGA	GAACTGGCA	AAGGGGATGA	TGGTGGAAGT	
TTTGTCTGT	CTAATGAAGT	GAAAAATGAA	AATGCTAGAG	TTTGTGCAA	5900
CATAATAGTA	GCAGTAAAAA	CCAAGTGAAA	AGTCTTTCCA	AAACTGTGTT	
C					
AAGAGGGCAT	CTGCTGGGAA	ACGATTTGAG	GAGAAGGTAC	TAAATTGCTT	6000
GGTATTTTCC	GTAGGAACCC	CAGAGCGAAA	TACAGTTTGC	AAAAGATGTC	
T					
[exon 3: 6015..					
CAGATGGGTT	CTTCTCAAAT	GAGACGTCAT	CTAAAGCACC	CTGTAGAAAA	6100
CACACAAATT	GCAGTGTCTT	TGGTCTCCTG	CTAACTCAGA	AAGGAAATGC	
AACACACGAC	AACATATGTT	CCGGAAACAG	TGAATCAACT	CAAAAATGTG	6200
GAATAGGTAA	TTACATTCCA	AAATACGTCT	TTGTACGATT	TTGTAGTATC	
..6206]					
ATCTCTCTCT	CTGAGTTGAA	CACAAGGCCT	CCAGCCACAT	TCTTGGTCAA	6300
ACTTACATTT	TCCCTTTCTT	GAATCTTAAC	CAGCTAAGGC	TACTCTCGAT	
GCATTACTGC	TAAAGCTACC	ACTCAGAATC	TCTCAAAAAC	TCATCTTCTC	6400
ACAGATAACA	CCTCAAAGCT	TGATTTTCTC	TCCTTTCACA	CTGAAATCAA	
ATCTTGCCCA	TAGGCAAAGG	GCAGTGTCAA	GTTTGCCACT	GAGATGAAAT	6500
TAGGAGAGTC	CAAAGCTGAG	AATTCACGTT	GTGTGTTATT	ACTTTCACGA	
ATGTCTGTAT	TATTAATAA	AGTATATATT	GGCAACTAAG	AAGCAAAGTG	6600
ATATAACAT	GATGACAAAT	TAGGCCAGGC	ATGGTGGCTT	ACTCCTATAA	
TCCCAACATT	TTGGGGGGCC	AAGGTAGGCA	GATCACTTGA	GGTCAGGATT	6700
TCAAGACCAG	CCTGACCAAC	ATGGTGAAAC	CTGTCTCTA	CTAAAAATAC	
AAAAATTAGC	TGGGCATGTT	AGCAGGCAT	TCTAGTACCA	GCTACTCAGG	6800
GCTGAGGCAG	GAGAATCGCT	TGAACCCAGG	AGATGGAGGT	TGCAGTGAGC	
TGAGATTGTA	CCACTGCACT	CCAGTCTGGG	CAACAGAGCA	AGATTTTCATC	6900
ACACACACAC	ACACACACAC	ACACACACAC	ATTAGAAATG	TGTACTTGGC	
TTTGTACCT	ATGGTATTAG	TGCATCTATT	GCATGGAAT	TCCAAGCTAC	7000
TCTGGTTGTG	TTAAGCTCTT	CATTGGGTAC	AGGTCACTAG	TATTAAGTTC	
AGGTTATTCG	GATGCATTCC	ACGGTAGTGA	TGACAATTCA	TCAGGCTAGT	7100
GTGTGTGTT	ACCTTGTAC	TCCCACCACT	AGACTAATCT	CAGACCTTCA	
CTCAAAGACA	CATTACACTA	AAGATGATTT	GCTTTTTTGT	GTTTAATCAA	7200

FIGURE 1C

4/7

GCAATGGTAT	AAACCAGCTT	GACTCTCCCC	AAACAGTTTT	TCGTACTACA	
AAGAAGTTTA	TGAAGCAGAG	AAATGTGAAT	TGATATATAT	ATGAGATTCT	7300
AACCCAGTTC	CAGCATTGTT	TCATTGTGTA	ATTGAAATCA	TAGACAAGCC	
ATTTTAGCCT	TTGCTTTCTT	ATCTAAAAAA	AAAAAAAAAA	AAATGAAGGA	7400
AGGGGTATTA	AAAGGAGTGA	TCAAATTTTA	ACATTCTCTT	TAATTAATTC	
ATTTTTAATT	TTACTTTTTT	TCATTTATTG	TGCACTTACT	ATGTGGTACT	7500
GTGCTATAGA	GGCTTTAACA	TTTATAAAAA	CACTGTGAAA	GTTGCTTCAG	
ATGAATATAG	GTAAGTAGAAC	GGCAGAACTA	GTATTCAAAG	CCAGGTCTGA	7600
TGAATCCAAA	AACAAACACC	CATTACTCCC	ATTTCTGGG	ACATACTTAC	
TCTACCCAGA	TGCTCTGGGC	TTTGTAAATG	CTATGTAAAT	AACATAGTTT	7700
TATGTTTGGT	TATTTTCCTA	TGTAATGTCT	ACTTATATAT	CTGTATCTAT	
CTCTTGCTTT	GTTTCCAAAG	GTAAACTATG	TGCTCTAAATG	TGGGCAAAAA	7800
ATAACACACT	ATTCCAAATT	ACTGTTCAAA	TTCTTTTAAG	TCAGTGATAA	
TTATTTGTTT	TGACATTAAT	CATGAAGTTC	CCTGTGGGTA	CTAGGTAAAC	7900
CTTTAATAGA	ATGTTAATGT	TTGTATTTCAT	TATAAGAATT	TTTGGCTGTT	
ACTTATTTAC	AACAATATTT	CACTCTAATT	AGACATTTAC	TAAACTTTCT	8000
CTTGAAAACA	ATGCCCAAAA	AAGAACATTA	GAAGACACGT	AAGCTCAGTT	
GGTCTCTGCC	ACTAAGACCA	GCCAACAGAA	GCTTGATTTT	ATTCAAACTT	8100
TGCATTTTAG	CATATTTTAT	CTTGGAAAAT	TCAATTGTGT	TGGTTTTTTG	
A					
TTTTTGTTTG	TATTGAATAG	ACTCTCAGAA	ATCCAATTGT	TGAGTAAATC	8200
TTCTGGGTTT	TCTAACCTTT	CTTTAGATGT	TACCCGTGTGT	GAGGAGGCAT	
[exon 4: 8227..					
TCTTCAGGTT	TGCTGTTTCT	ACAAAGTTTA	CGCCTAACTG	GCTTAGTGTC	8300
TTGGTAGACA	ATTTGCCTGG	CACCAAAGTA	AACGCAGAGA	GTGTAGAGAG	
T					
GATAAAACGG	CAACACAGCT	CACAAGAACA	GACTTTCCAG	CTGCTGAAGT	8400
G					
TATGGAAACA	TCAAAACAAA	GACCAAGATA	TAGTCAAGAA	GATCATCCAA	
G					
GGTATGATAA	TCTAAAATAA	AAAGATCAAT	CAGAAATCAA	AGACACCTAT	8500
C					
..8451]					
TTATCATAAA	CCAGGAACAA	GACTGCATGT	ATGTTTAGTT	GTGTGGATCT	
TGTTTTCCCTG	TTGGAATCAT	TGTTGGACTG	AAAAAGTTTC	CACCTGATAA	8600
TGTAGATGTG	ATTCCACAAA	CAGTTATACA	AGGTTTTGTT	CTCACCCTG	
CTCCCCAGTT	TCCTTGTA	GTATGTTGAA	CACTCTAAGA	GAAGAGAAAT	8700
GCATTTGAAG	GCAGGGCTGT	ATCTCAGGGA	GTCGCTTCCA	GATCCCTTAA	
CGCTTCTGTA	AGCAGCCCC	CTAGACCACC	AAGGAGAAGC	TCTATAACCA	8800
CTTTGTATCT	TACATTGCAC	CTCTACCAAG	AAGCTCTGTT	GTATTTACTT	
GGTAATTCTC	TCCAGGTAGG	CTTTTCGTAG	CTTACAAATA	TGTTCTTATT	8900
AATCCTCATG	ATATGGCCTG	CATTAAAATT	ATTTTAATGG	CATATGTTAT	
GAGAATTAAT	GAGATAAAAT	CTGAAAAGTG	TTTGAGCCTC	TTGTAGGAAA	9000
AAGCTAGTTA	CAGCAAAATG	TTCTCACATC	TTATAAGTTT	ATATAAAGAT	
TCTCCTTTAG	AAATGGTGTG	AGAGAGAAAC	AGAGAGAGAT	AGGGAGAGAA	9100
GTGTGAAAGA	ATCTGAAGAA	AAGGAGTTTC	ATCCAGTGTG	GACTGTAAGC	
TTTACGACAC	ATGATGGAAA	GAGTCTTGAC	TTTCAAGTAA	ATTGGGAGGA	9200
CATGCTAGAA	GAAAAAGGAA	GAAGAGTTTC	CATAATGCAG	ACAGGGTCAG	
TGAGAAATTC	ATTGAGGTCC	TCACCAAGTAG	TTAAATGACT	GTATAGTCTT	9300
GCACTACCTT	AAAAAACTTC	AAGTATCTGA	AACCGGGGCA	ACAGATTTTA	
GGAGACCAAC	GTCTTTGAGA	GCTGATTGCT	TTTGCTTATG	CAAAGAGTAA	9400
ACTTTTATGT	TTTGAGCAAA	CCAAAAGTAT	TCTTTGAACG	TATAATTAGC	
CCTGAAGCCG	AAAGAAAAGA	GAAAATCAGA	GACCGTTAGA	ATTGGAAGCA	9500
ACCAAATTC	CTATTTTATA	AATGAGGACA	TTTTAACCCA	GAAAGATGAA	

FIGURE 1D

5/7					
CCGATTTGGC	TTAGGGCTCA	CAGATACTAA	GTGACTCATG	TCATTAATAG	9600
AAATGTTAGT	TCCTCCCTCT	TAGGTTTGTA	CCCTAGCTTA	TTACTGAAAT	
ATTCTCTAGG	CTGTGTGTCT	CCTTTAGTTC	CTCGACCTCA	TGTCTTTGAG	9700
TTTTTCAGATA	TCCTCCTCAT	GGAGGTAGTC	CTCTGGTGCT	ATGTGTATTC	
TTTAAAGGCT	AGTTACGGCA	ATTAAC TTAT	CAACTAGCGC	CTACTAATGA	9800
AACTTTGTAT	TACAAAGTAG	CTAACTTGAA	TACTTTCCTT	TTTTTCTGAA	
ATGTTATGGT	GGTAATTTCT	CAAAC TTTT	CTTAGAAAAC	TGAGAGTGAT	9900
GTGTCTTATT	TTCTACTGTT	AATTTTCAAA	ATTAGGAGCT	TCTTCCAAAG	
TTTTGTTGGA	TGCCAAAAAT	ATATAGCATA	TTATCTTATT	ATAACAAAAA	10000
ATATTTATCT	CAGTTCTTAG	AAATAAATGG	TGTCAC TTAA	CTCCCTCTCA	
AAAGAAAAGG	TTATCATTGA	AATATAATTA	TGAAATTCTG	CAAGAACCTT	10100
TTGCCTCAGC	CTTGTTTTAT	GATGGCATTG	GATGAATATA	AATGATGTGA	
ACACTTATCT	GGGCTTTTGC	TTTATGCAGA	TATTGACCTC	TGTGAAAACA	10200
[exon 5: 10180..					
GCGTGCAGCG	GCACATTGGA	CATGCTAACC	TCACCTTCGA	GCAGCTTCGT	
A					
AGCTTGATGG	AAAGCTTACC	GGGAAAGAAA	GTGGGAGCAG	AAGACATTGA	10300
AAAAACAATA	AAGGCATGCA	AACCCAGTGA	CCAGATCCTG	AAGCTGCTCA	
GTTTGTGGCG	AATAAAAAAT	GGCGACCAAG	ACACCTTGAA	GGGCC TAATG	10400
CACGCACTAA	AGCACTCAAA	GACGTACCAC	TTTCCCAAAA	CTGTCACTCA	
GAGTCTAAAG	AAGACCATCA	GGTTCCTTCA	CAGCTTCACA	ATGTACAAAT	10500
TGTATCAGAA	GTTATTTTTTA	GAAATGATAG	GTAACCAGGT	CCAATCAGTA	
C					
AAAATAAGCT	GCTTATAACT	GGAAATGGCC	ATTGAGCTGT	TTCTCACAA	10600
..10568]					
TTGGCGAGAT	CCCATGGATG	AGTAAACTGT	TTCTCAGGCA	CTTGAGGCTT	
TCAGTGATAT	CTTTCTCATT	ACCACTGACT	AATTTTGCCA	CAGGGTACTA	10700
AAAGAAACTA	TGATGTGGAG	AAAGGACTAA	CATCTCCTCC	AATAAACCCC	
AAATGGTTAA	TCCAAC TGTC	AGATCTGGAT	CGTTATCTAC	TGACTATATT	10800
TTCCCTTATT	ACTGCTTGCA	GTAATTC AAC	TGGAAATTAA	AAAAAAAAAA	
CTAGACTCCA	CTGGGCCCTTA	CTAAATATGG	GAATGTCTAA	CTTAAATAGC	10900
TTTGGGATTC	CAGCTATGCT	AGAGGCTTTT	ATTAGAAAGC	CATATTTTTT	
TCTGTAAAAG	TTACTAATAT	ATCTGTAACA	CTATTACAGT	ATTGCTATTT	11000
ATATTCATTC	AGATATAAGA	TTTGACATA	TTATCATCCT	ATAAAGAAAC	
GGTATGACTT	AATTTTAGAA	AGAAAATTAT	ATTCTGTTTA	TTATGACAAA	11100
TGAAAGAGAA	AATATATATT	TTTAATGGAA	AGTTTGTAGC	ATTTTTCTAA	
TAGGTACTGC	CATATTTTTT	TGTGTGGAGT	ATTTTTATAA	TTTTATCTGT	11200
ATAAGCTGTA	ATATCATTTT	ATAGAAAATG	CATTATTTAG	TCAATTGTTT	
AATGTTGGAA	AACATATGAA	ATATAAATTA	TCTGAATATT	AGATGCTCTG	11300
AGAAATTGAA	TGTACCTTAT	TTAAAAGATT	TTATGGTTTT	ATAACTATAT	
AAATGACATT	ATTAAAGTTT	TCAAATTATT	TTTTATTGCT	TTCTCTGTTG	11400
CTTTTATT					11408

FIGURE 1E

POLYMORPHISMS IN THE CODING SEQUENCE OF TNFRSF11B

ATGAACAAGT	TGCTGTGCTG	CGCGCTCGTG	TTTCTGGACA	TCTCCATTAA	
C					
GTGGACCACC	CAGGAAACGT	TTCCTCCAAA	GTACCTTCAT	TATGACGAAG	100
AAACCTCTCA	TCAGCTGTTG	TGTGACAAAT	GTCCTCCTGG	TACCTACCTA	
AAACAACACT	GTACAGCAAA	GTGGAAGACC	GTGTGCGCCC	CTTGCCCTGA	200
CCACTACTAC	ACAGACAGCT	GGCACACCAG	TGACGAGTGT	CTATACTGCA	
GCCCCGTGTG	CAAGGAGCTG	CAGTACGTCA	AGCAGGAGTG	CAATCGCACC	300
CACAACCGCG	TGTGCGAATG	CAAGGAAGGG	CGCTACCTTG	AGATAGAGTT	
CTGCTTGAAA	CATAGGAGCT	GCCCTCCTGG	ATTTGGAGTG	GTGCAAGCTG	400
GAACCCCAAG	GCGAAATACA	GTTTGCAAAA	GATGTCCAGA	TGGGTTCTTC	
TCAAATGAGA	CGTCATCTAA	AGCACCTGT	AGAAAACACA	CAAATTGCAG	500
TGTCTTTGGT	CTCCTGCTAA	CTCAGAAAGG	AAATGCAACA	CACGACAACA	
TATGTTCCGG	AAACAGTGAA	TCAACTCAAA	AATGTGGAAT	AGATGTTACC	600
CTGTGTGAGG	AGGCATTCTT	CAGGTTTGCT	GTTCTCTACAA	AGTTTACGCC	
TAACTGGCTT	AGTGTCTTGG	TAGACAATTT	GCCTGGCACC	AAAGTAAACG	700
			T		
CAGAGAGTGT	AGAGAGGATA	AAACGGCAAC	ACAGCTCACA	AGAACAGACT	
	G				
TTCCAGCTGC	TGAAGTTATG	GAAACATCAA	AACAAAGACC	AAGATATAGT	800
	G				
CAAGAAGATC	ATCCAAGATA	TTGACCTCTG	TGAAAACAGC	GTGCAGCGGC	
			A		
ACATTGGACA	TGCTAACCTC	ACCTTCGAGC	AGCTTCGTAG	CTTGATGGAA	900
AGCTTACCGG	GAAAGAAAGT	GGGAGCAGAA	GACATTGAAA	AAACAATAAA	
GGCATGCAAA	CCCAGTGACC	AGATCCTGAA	GCTGCTCAGT	TTGTGGCGAA	1000
TAAAAAATGG	CGACCAAGAC	ACCTTGAAGG	GCCTAATGCA	CGCACTAAAG	
CACTCAAAGA	CGTACCACTT	TCCCAAAACT	GTCACCTCAGA	GTCTAAAGAA	1100
GACCATCAGG	TTCCTTCACA	GCTTCACAAT	GTACAAATTG	TATCAGAAGT	
			C		
TATTTTTAGA	AATGATAGGT	AACCAGGTCC	AATCAGTAAA	AATAAGCTGC	1200
TTATAA					1206

FIGURE 2

ISOFORMS OF THE TNFRSF11B PROTEIN

MNKLCCALV	FLDISIKWTT	QETFPPKYLH	YDEETSHQLL	CDKCPPGTYL	
N					
KQHCTAKWKT	VCAPCPDHYY	TDSWHTSDEC	LYCSPVCKEL	QYVKQECNRT	100
HNRVCECKEG	RYLEIEFCLK	HRSCPPGFGV	VQAGTPERNT	VCKRCPDGFF	
SNETSSKAPC	RKHTNCSVFG	LLLTQKGNAT	HDNICSGNSE	STQKCGIDVT	200
LCEEAFRFA	VPTKFTPNWL	SVLVDNLPGT	KVNAESVERI	KRQHSSQEQT	
			M		
FQLLKLWKHQ	NKDQDIVKKI	IQDIDLCENS	VQRHIGHANL	TFEQLRSLME	300
			M		
SLPGKKVGAE	DIEKTIKACK	PSDQILKLLS	LWRIKNGDQD	TLKGLMHALK	
HSKTYHFPKT	VTQSLKKTIR	FLHSFTMYKL	YQKLFLEMIG	NQVQSVKISC	400
L					401

10044574.010902

FIGURE 3

SEQUENCE LISTING

<110> Chew, Anne
 Denton, R. Rex
 Bieglecki, Karyn M
 Nandabalan, Krishnan
 Stephens, J. Claiborne

 <120> HAPLOTYPES OF THE TNFRSF11B GENE

 <130> TNFRSF11B_MWH-0001US (CIP)

 <140> TBA
 <141> 2002-01-09

 <150> PCT/US00/18803
 <151> 2000-07-10

 <160> 94

 <170> PatentIn version 3.1

 <210> 1
 <211> 11408
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> allele
 <222> (504)..(504)
 <223> PS1: polymorphic base G or T

 <220>
 <221> allele
 <222> (717)..(717)
 <223> PS2: polymorphic base C or T

 <220>
 <221> allele
 <222> (744)..(744)
 <223> PS3: polymorphic base G or T

 <220>
 <221> allele
 <222> (778)..(778)
 <223> PS4: polymorphic base T or C

 <220>
 <221> allele
 <222> (1009)..(1009)
 <223> PS5: polymorphic base G or C

 <220>
 <221> allele
 <222> (1045)..(1045)
 <223> PS6: polymorphic base C or T

20060707 14:54:40

<220>
<221> allele
<222> (1122)..(1122)
<223> PS7: polymorphic base G or A

<220>
<221> allele
<222> (1218)..(1218)
<223> PS8: polymorphic base C or A

<220>
<221> misc_feature
<222> (1501)..(1550)
<223> Sequence undetermined between contigs

<220>
<221> allele
<222> (2014)..(2014)
<223> PS9: polymorphic base C or T

<220>
<221> allele
<222> (2177)..(2177)
<223> PS10: polymorphic base T or C

<220>
<221> allele
<222> (5906)..(5906)
<223> PS11: polymorphic base T or C

<220>
<221> allele
<222> (6010)..(6010)
<223> PS12: polymorphic base C or T

<220>
<221> allele
<222> (8110)..(8110)
<223> PS13: polymorphic base G or A

<220>
<221> allele
<222> (8333)..(8333)
<223> PS14: polymorphic base C or T

<220>
<221> allele
<222> (8354)..(8354)
<223> PS15: polymorphic base A or G

<220>
<221> allele
<222> (8402)..(8402)
<223> PS16: polymorphic base A or G

<220>

<221> allele
 <222> (8459)..(8459)
 <223> PS17: polymorphic base A or C

<220>
 <221> allele
 <222> (10203)..(10203)
 <223> PS18: polymorphic base G or

<220>
 <221> allele
 <222> (10512)..(10512)
 <223> PS19: polymorphic base T or C

<400> 1
 acagcgaaacc ctagagcaaa gtgccaaact tctgtcgata gcttgaggct agtggaaaga 60
 cctcgaggag gctactccag aagttcagcg cgtaggaagc tccgatacca atagcccttt 120
 gatgatggtg gggttggtga agggaaacagt gctccgcaag gttatccctg cccagggcag 180
 tccaattttc actctgcaga ttctctctgg ctctaactac cccagataac aaggagtgaa 240
 tgcagaatag cacgggcttt agggccaatc agacattagt tagaaaaatt cctactacat 300
 ggtttatgta aacttgaaga tgaatgattg cgaactcccc gaaaagggct cagacaatgc 360
 catgcataaa gagggggccct gtaatttgag gtttcagaac ccgaagtga ggggtcaggc 420
 agccgggtac ggcggaact cacagctttc gccagcgag aggacaaagg tctgggacac 480
 actccaactg cgtccggatc ttgkctggat cggactctca ggggtggagga gacacaagca 540
 cagcagctgc ccagcgtgtg cccagccctc ccaccgctgg tcccggctgc caggaggctg 600
 gccgctggcg ggaaggggcc gggaaacctc agagccccgc ggagacagca gccgccttgt 660
 tcctcagccc ggtggttttt ttttcccctg ctctcccagg ggacagacac caccgcycca 720
 cccctcagc cccacctccc tggkggatcc tttccgcccc agccctgaaa gcgttaaycc 780
 tggagctttc tgcacacccc ccgaccgctc ccgcccagc ttcctaaaaa agaaaggtgc 840
 aaagtttgt ccaggataga aaaatgactg atcaaaggca ggcgatactt cctgttgccg 900
 ggacgtata tataacgtga tgagcgacag ggetgcgag acgcaccgga gcgctcgccc 960
 agccgccgcc tccaagcccc tgaggtttcc ggggaccaca atgaacaast tgctgtgctg 1020
 cgcgctcgtg gtaagtccct gggcyagccg acgggtgccc ggcgctggg gaggtcgtg 1080
 ccacctggtc tcccaacctc ccagcggacc ggcggggaga argctccact cgctccctcc 1140
 caggagaggc ttggggttag gctggagcag gaaaccgctt tcaagttatg ccatgcttcc 1200
 cctaagggtg ccttttamgc tgcaaagttc ctgctgactt tatggaagac agcaagagag 1260
 agacagacag cgagagagag ggagagagag agagagagaa acttgtttga agtttttagt 1320
 cattaacctt ctgtcttcat ctcagaatat taacgccctc atgtagtcca tactatcttt 1380
 gcttaatgaa cttgaacttt tattattagt ggcaaagaag tggctccctta gattcagagt 1440
 aagtgggaag aagacgttag tcttcttaaa accattataa ttagaatatg acatgataga 1500
 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN caggactttg 1560
 agtcaaatga tactgttgca cataagaaca aacctatttt catgctaaga tgatgccact 1620
 gtgttccttt ctcttctag tttctggaca tctccattaa gtggaccacc caggaaacgt 1680
 ttctccaaa gtaccttcat tatgacgaag aaacctctca tcagctgttg tgtgacaaat 1740
 gtctccttg taacctacta aaacaacact gtacagcaaa gtggaagacc gtgtgcgccc 1800
 cttgccctga ccaactactac acagacagct ggcaaccag tgacgagtgt ctatactgca 1860
 gccccgtgtg caaggagctg cagtacgtca agcaggagtg caatcgacc cacaaccgcg 1920
 tgtgcgaatg caaggaagg cgctaccttg agatagagtt ctgcttgaaa cataggagct 1980
 gccctcctgg atttggagtg gtgcaagctg gtaygtgtca atgtgcagca aaattaatta 2040
 ggatcatgca aagtcagata gttgtgacag tttaggagaa cacttttgtt ctgatgacat 2100
 tataggatag caaattgcaa aggtaatgaa acctgccagg taggtactat gtgtctggag 2160
 tgcttccaaa ggaccaytgc tcagaggaat actttgccac tacagggcaa tttaatgaca 2220
 aatctcaaat gcagcaaat attctctcat gagatgcata atggtttttt tttttttttt 2280
 taaagaaaaca aactcaagtt gcactattga tagttgatct atacctctat atttcacttc 2340
 agcatggaca ccttcaaact gcagcacttt ttgacaaaca tcagaaatgt taatttatat 2400
 caagagagta attatgctca tattaatgag actctggagt gctaacaata agcagttata 2460
 attaattatg taaaaaatga gaatggtgag gggaattgca tttcattatt aaaaacaagg 2520

ctagttcttc	ctttagcatg	ggagctgagt	gtttgggagg	gtaaggacta	tagcagaatc	2580
tcttcaatga	gcttattctt	tatcttagac	aaaacagatt	gtcaagccaa	gagcaagcac	2640
ttgcctataa	accaagtgtc	ttctcttttg	cattttgaac	agcattgggc	agggctcatg	2700
tgtattgaat	cttttaaacc	agtaaccac	gttttttttc	tgccacattt	gcgaagcttc	2760
agtgcagcct	ataacttttc	atagcttgag	aaaattaaaga	gtatccactt	acttagatgg	2820
aagaagtaat	cagtatagat	tctgatgact	cagtttgaag	cagtgtttct	caactgaagc	2880
cctgctgata	ttttaagaaa	tatctggatt	cctaggctgg	actccttttt	gtgggcagct	2940
gtcctgcgca	ttgtagaatt	ttggcagcac	ccctggactc	tagccactag	ataccaatag	3000
cagtccttcc	cccatgtgac	agccaaaaat	gtcttcagac	actgtcaaata	gtcgccaggt	3060
ggcaaaatca	ctcctgggtg	agaacagggt	catcaatgct	aagtatctgt	aactattttta	3120
actctcaaaa	cttgtgatata	acaaagtcta	aattattaga	cgaccaatac	tttaggttta	3180
aaggcataca	aatgaaacat	tcaaaaaatca	aaatctattc	tgttttctcaa	atagtgaatc	3240
ttataaaatt	aatcacagaa	gatgcaaatt	gcacagaggt	cccttaaaaat	tcctcttcgt	3300
atgagttaatt	gagggaggaa	ttggtgatag	ttcctacttt	ctattggatg	gtactttgag	3360
actcaaaagc	taagctaagt	tgtgtgtgtg	tcagggtgcg	gggtgtggaa	tcccatcaga	3420
taaaagcaaa	tccatgtaat	tcattcagta	agttgtatat	gtagaaaaat	gaaaagtggg	3480
ctatgcagct	tggaaactag	agaattttga	aaaataatgg	aaatcacaag	gatctttctt	3540
aaataagtaa	gaaaatctgt	ttgtagaatg	aagcaagcag	gcagccagaa	gactcagaac	3600
aaaagtacac	attttactct	gtgtacactg	gcagcacagt	gggatttatt	tacctctccc	3660
tccttaaaaa	cccacacagc	ggttcctctt	gggaaataag	aggtttccag	cccaaagaga	3720
aggaaagact	atgtggtgtt	actctaaaaa	gtattttaata	accgttttgt	tggtgctgtt	3780
gctgttttga	aatcagattg	tctcctctcc	atattttatt	tacttcattc	tgtaatttcc	3840
tgtggaatta	cttagagcaa	gcattggtgaa	ttctcaactg	taaagccaaa	tttctccatc	3900
attataattt	cacattttgc	ctggcaggtt	ataattttta	tatttccact	gatagtaata	3960
aggtaaaatc	attacttaga	tggatagatc	tttttcataa	aaagtacat	cagttataga	4020
gggaagtcac	gttcatgttc	aggaaggtca	ttagataaag	cttctgaata	tattatgaaa	4080
cattagttct	gtcattctta	gattcttttt	gttaaaatac	tttaaaagct	aacttaccta	4140
aaagaaatat	ctgacacata	tgaacttctc	attaggatgc	aggagaagac	ccaagccaca	4200
gatattgtatc	tgaagaatga	acaagattct	taggcccggc	acggtggctc	acatctgtaa	4260
tctcaagagt	ttgagaggtc	aaggcgggca	gatcacctga	ggtcaggagt	tcaagaccag	4320
cctggccaac	atgatgaaac	cctgcctcta	ctaaaaatac	aaaaattagc	agggcatggt	4380
ggtgcatgcc	tgcaacccta	gctactcagg	aggctgagac	aggagaatct	cttgaaccct	4440
cgaggcggag	gttgtggtga	gctgagatcc	ctctactgca	ctccagcctg	ggtgacagag	4500
atgagactcc	gtccctgccg	ccgccccccg	cttccccccc	aaaaagattc	ttcttcatgc	4560
agaacatacg	cgagtcaaca	aaggagagacc	tgggtccagg	tgtccaagtc	acttattttcg	4620
agtaaatag	caatgaaaga	atgccatgga	atccctgccc	aaataacctc	gcttatgata	4680
ttgtagaatt	tgatatagag	ttgtatccca	tttaaggagt	aggatgtagt	aggaaagtac	4740
taaaaacaaa	cacacaaaca	gaaaaccctc	tttgctttgt	aagggtggtc	ctaagataat	4800
gtcagtgcac	tgctggaatt	aatattttaat	atgtgaaggt	tttaggctgt	gttttccctt	4860
cctgttcttt	ttttctgcca	gccctttgtc	atttttgcag	gtcaatgaat	catgtagaaa	4920
gagacaggag	atgaaactag	aaccagtcca	ttttgcccct	ttttttattt	tctggttttg	4980
gtaaaagata	caatgaggtg	ggaggttgag	atttataaat	gaagtttaat	aagtttctgt	5040
agctttgatt	tttctcttcc	atatttggtg	tcttgcataa	gccagaattg	gcctgtaaaa	5100
tctacatatg	gatattgaag	tctaaatctg	ttcaactagc	ttacactaga	tggagatatt	5160
ttcatattca	gatacactgg	aatgtatgat	ctagccatgc	gtaatatagt	caagtgtttg	5220
aaggatattt	tttttaatat	cgtcttttagt	tgtggactgg	ttcaagtttt	tctgccaatg	5280
atttcttcaa	atttatcaaa	tattttttcca	tcatgaagta	aaatgccctt	gcagtcaccc	5340
ttcctgaagt	ttgaacgact	ctgctgtttt	aaacagttta	agcaaatggg	atatcatctt	5400
ccgtttacta	tgtagcttaa	ctgcaggctt	acgcttttga	gtcagcggcc	aactttattg	5460
ccaccttcaa	aagtttatta	taatgttgta	aatttttact	tctcaagggt	agcatactta	5520
ggagttgctt	cacaattagg	attcaggaaa	gaaagaactt	cagtaggaac	tgattggaat	5580
ttaattgatgc	agcattcaat	gggtactaat	ttcaaagaat	gatattacag	cagacacaca	5640
gcagttatct	tgattttcta	ggaataattg	tataagaat	atggctgaca	acacggcctt	5700
actgccactc	agcggaggct	ggactaatga	acaccctacc	cttctttcct	ttcctctcac	5760
atttcatgag	cgtttttag	gtaacgagaa	aattgacttg	catttgcaat	acaaggagga	5820
gaaactggca	aaggggatga	tgggtggaagt	tttgttctgt	ctaataaggt	gaaaaatgaa	5880
aatgctagag	ttttgtgcaa	cataayagta	gcagtaaaaa	ccaagtgaat	agtctttcca	5940

aaactgtggt	aagagggcat	ctgctgggaa	acgatttgag	gagaaggtac	taaattgctt	6000
ggtattttct	gtaggaaccc	cagagcgaaa	tacagtttgc	aaaagatgtc	cagatggggt	6060
cttctcaaat	gagacgtcat	ctaaagcacc	ctgtagaaaa	cacacaaatt	gcagtgtctt	6120
tggctctcct	ctaactcaga	aaggaaatgc	aacacacgac	aacatatgtt	ccggaacacag	6180
tgaatcaact	caaaaatgtg	gaataggtaa	ttacattcca	aaatacgtct	ttgtacgatt	6240
ttgtagtatc	atctctctct	ctgagttgaa	cacaaggcct	ccagccacat	tcttgggtcaa	6300
acttacattt	tccctttctt	gaatcttaac	cagctaaggc	tactctcgat	gcattactgc	6360
taaagctacc	actcagaatc	tctcaaaaac	tcattcttct	acagataaca	cctcaaagct	6420
tgattttctc	tcccttcaca	ctgaaatcaa	atcttgccca	taggcaaagg	gcagtgtcaa	6480
gtttgccact	gagatgaaat	taggagagtc	caaactgtag	aattcacgtt	gtgtgttatt	6540
actttcacga	atgtctgtat	tattaactaa	agtatatatt	ggcaactaag	aagcaaagtg	6600
atataaacat	gatgacaaat	taggccaggc	atgggtggct	actcctataa	tcccaacatt	6660
ttggggggcc	aaggtaggca	gatcacttga	ggtcaggatt	tcaagaccag	cctgaccaac	6720
atggtgaaac	cttgtctcta	ctaaaaatac	aaaaattagc	tgggcatggg	agcaggcact	6780
tctagtacca	gctactcagg	gctgaggcag	gagaatcgct	tgaaccagg	agatggagg	6840
tgagtgagc	tgagattgta	ccactgcact	ccagtctggg	caacagagca	agatttcatc	6900
acacacacac	acacacacac	acacacacac	attagaaatg	tgtacttggc	tttgttacct	6960
atggtattag	tgcactctatt	gcatggaaat	tccaagctac	tctggttggt	ttaagctctt	7020
cattgggtac	aggctactag	tattaagttc	aggttattcg	gatgcattcc	acggtagtga	7080
tgacaattca	tcaggctagt	gtgtgtgttc	accttgtcac	tcccaccact	agactaatct	7140
cagaccttca	ctcaaagaca	cattacacta	aagatgattt	gcttttttgt	gtttaatcaa	7200
gcaatgggat	aaaccagctt	gactctcccc	aaacagtttt	tcgtactaca	aagaagttta	7260
tgaagcagag	aaatgtgaat	tgatatatat	atgagattct	aaccagtttc	cagcattggt	7320
tcatgtgtga	attgaaatca	tagacaagcc	attttagcct	ttgctttctt	atctaaaaaa	7380
aaaaaaaaaa	aaatgaagg	aggggtatta	aaaggagatg	tcaaatttta	acattctctt	7440
taattaattc	atttttaatt	ttactttttt	tcattttattg	tgcacttact	atgtgggtact	7500
gtgctataga	ggctttaaca	tttataaaaa	cactgtgaaa	gttgcttcag	atgaatatag	7560
gtagtagaac	ggcagaacta	gtattcaaag	ccagggtctga	tgaatccaaa	aacaaacacc	7620
cattactccc	attttctggg	acatacttac	tctaccaga	tgctctgggc	tttgtaatgc	7680
ctatgtaaat	aacatagttt	tatgtttggg	tattttccta	tgtaatgtct	acttatatat	7740
ctgtatctat	ctcttgcttt	gtttccaaag	gtaaaactatg	tgtctaaatg	tgggcaaaaa	7800
ataacacact	attccaaatt	actgttcaaa	ttcctttaag	tcagtgataa	ttatttgttt	7860
tgacattaat	catgaagttc	cctgtgggta	ctaggtaaac	ctttaataga	atgttaattgt	7920
ttgtattcat	tataagaatt	tttggtggtt	acttattttac	aacaataattt	cactctaatt	7980
agacatttac	taaactttct	cttgaaaaaca	atgccaaaaa	aagaacatta	gaagacacgt	8040
aagctcagtt	ggtctctgcc	actaagacca	gccaacagaa	gcttgattttt	attcaaaactt	8100
tgcattttar	catattttat	cttggaataa	tcaatttgtgt	tgggttttttg	tttttgtttg	8160
tattgaatag	actctcagaa	atccaattgt	tgagtaaatac	ttctgggttt	tctaaccctt	8220
ctttagatgt	taccctgtgt	gaggagcat	tcttcagggt	tgctgttcct	acaaagttta	8280
cgctaactg	gcttagtgtc	ttggtagaca	atttgcctgg	caccaaagta	aygcagaga	8340
gtgtagagag	gatraaacgg	caacacagct	cacaagaaca	gactttccag	ctgctgaagt	8400
trtggaatac	tcaaaaacaa	gaccaagata	tagtcaagaa	gatcatccaa	ggtagatma	8460
tctaaaataa	aaagatcaat	cagaaatcaa	agacacctat	ttatcataaa	ccaggaacaa	8520
gactgcatgt	atgtttagtt	gtgtggatct	tgtttccctg	ttggaatcat	tgttggactg	8580
aaaaagtttc	cacctgataa	tgtagatgtg	attccacaaa	cagttataca	aggttttggt	8640
ctcaccctcg	ctccccagtt	tccttgtaaa	gtatgttgaa	cactctaaga	gaagagaaat	8700
gcatttgaa	gcagggtgtg	atctcaggga	gtcgttcca	gatcccttaa	cgcttctgta	8760
agcagccctc	ctagaccacc	aaggagaagc	tctataacca	ctttgtatct	tacattgcac	8820
ctctaccaag	aagctctggt	gtatttactt	ggtaattctc	tccaggtagg	cttttcgtag	8880
cttacaaata	tgttcttatt	aatcctcatg	atattggcctg	cattaaaaatt	attttaatgg	8940
catatgttat	gagaattaat	gagataaaat	ctgaaaagtg	tttgagcctc	ttgtaggaaa	9000
aagctagtta	cagcaaaatg	ttctcacatc	ttataagttt	atataaagat	tctcctttag	9060
aaatggtgtg	agagagaaac	agagagagat	agggagagaa	gtgtgaaaaga	atctgaagaa	9120
aaggagtttc	atccagtgtg	gactgtaagc	tttacgacac	atgatggaaa	gagttctgac	9180
ttcagtaagc	attgggagga	catgctagaa	gaaaaaggaa	gaagagtttc	cataatgcag	9240
acagggtcag	tgagaaattc	attcaggtcc	tcaccagtag	ttaaatgact	gtatagtctt	9300
gcactaccct	aaaaaacttc	aagtatctga	aaccggggca	acagatttta	ggagaccaac	9360

gtctttgaga	gctgattgct	tttgcttatg	caaagagtaa	acttttatgt	tttgagcaaa	9420
ccaaaagtat	tctttgaacg	tataattagc	cctgaagccg	aaagaaaaga	gaaaatcaga	9480
gaccgttaga	attggaagca	accaaattcc	ctattttata	aatgaggaca	ttttaaccca	9540
gaaagatgaa	ccgatttggc	ttagggctca	cagatactaa	gtgactcatg	tcattaatag	9600
aaatgttagt	tcctccctct	taggtttgta	ccctagctta	ttactgaaat	attctctagg	9660
ctgtgtgtct	cccttagttc	ctcgacctca	tgtctttgag	ttttcagata	tcctcctcat	9720
ggaggtagtc	ctctggtgct	atgtgtattc	tttaaaggct	agttacggca	attaacttat	9780
caactagcgc	ctactaatga	aactttgtat	tacaaagtag	ctaacttgaa	tactttcctt	9840
tttttctgaa	atgttatggt	ggtaatttct	caaacttttt	cttagaaaac	tgagagtgat	9900
gtgtcttatt	ttctactggt	aattttcaaa	attaggagct	tcttccaaag	ttttgttggg	9960
tgccaaaaat	atatagcata	ttatcttatt	ataacaaaaa	atatttatct	cagttcttag	10020
aaataaatgg	tgtcacttaa	ctccctctca	aaagaaaagg	ttatcattga	aatataatta	10080
tgaaattctg	caagaacctt	ttgcctcacg	cttggttttat	gatggcattg	gatgaatata	10140
aatgatgtga	acacttatct	gggcttttgc	tttatgcaga	tattgacctc	tgtgaaaaca	10200
gcrtgcagcg	gcacattgga	catgctaacc	tcaccttcga	gcagcttcgt	agcttgatgg	10260
aaagcttacc	gggaaagaaa	gtgggagcag	aagacattga	aaaaacaata	aaggcatgca	10320
aaccagtgga	ccagatcctg	aagctgctca	gtttgtggcg	aataaaaaat	ggcgaccaag	10380
acaccttgaa	gggcctaata	cacgcactaa	agcactcaaa	gacgtaccac	tttcccaaaa	10440
ctgtcactca	gagtctaaag	aagaccatca	ggttccttca	cagcttcaca	atgtacaaat	10500
tgtatcagaa	gytattttta	gaaatgatag	gtaaccaggt	ccaatcagta	aaaataagct	10560
gcttataact	ggaaatggcc	attgagctgt	ttcctcacaa	ttggcgagat	cccatggatg	10620
agtaaaactgt	ttctcaggca	cttgaggctt	tcagtgatat	ctttctcatt	accagtgact	10680
aattttgcca	cagggtacta	aaagaaacta	tgatgtggag	aaaggactaa	catctcctcc	10740
aataaacccc	aaatggttaa	tccaactgtc	agatctggat	cgttatctac	tgactatatt	10800
ttcccttatt	actgcttgca	gtaattcaac	tggaaattaa	aaaaaaaaaa	ctagactcca	10860
ctgggcctta	ctaaatatgg	gaatgtctaa	cttaaatagc	tttgggatcc	cagctatgct	10920
agaggctttt	attagaaagc	catatttttt	tctgtaaaag	ttactaatat	atctgtaaca	10980
ctattacagt	attgctatatt	atattcattc	agatataaga	tttggacata	ttatcatcct	11040
ataaagaaac	ggtatgactt	aatttttagaa	agaaaattat	attctgttta	ttatgacaaa	11100
tgaaagagaa	aatatatatt	tttaatggaa	agtttgtagc	atttttctaa	taggtactgc	11160
catatttttc	tgtgtggagt	atttttataa	ttttatctgt	ataagctgta	atatcatttt	11220
atagaaaaatg	cattatattag	tcaattgttt	aatgttggaa	aacatatgaa	atataaatta	11280
tctgaatatt	agatgctctg	agaaaattgaa	tgtaccttat	ttaaaagatt	ttatggtttt	11340
ataactatat	aaatgacatt	attaaaagttt	tcaaattatt	ttttattgct	ttctctgttg	11400
cttttatt						11408

<210> 2
 <211> 1206
 <212> DNA
 <213> Homo sapiens

<400> 2						
atgaacaagt	tgtgtgtgctg	cgcgctcgtg	tttctggaca	tctccattaa	gtggaccacc	60
caggaaaagt	ttcctccaaa	gtaccttcat	tatgacgaag	aaacctctca	tcagctgttg	120
tgtgacaaat	gtcctcctgg	tacctacct	aaacaacact	gtacagcaaa	gtggaagacc	180
gtgtgcgccc	cttgccctga	ccactactac	acagacagct	ggcacaccag	tgacgagtgt	240
ctatactgca	gccccgtgtg	caaggagctg	cagtacgtca	agcaggagtg	caatcgaccc	300
cacaaccgcg	tgtgcgaatg	caagggaagg	cgctaccttg	agatagagtt	ctgcttgaaa	360
cataggagct	gcccctcctg	atttggagtg	gtgcaagctg	gaaccccaga	gcgaaatata	420
gtttgcaaaa	gatgtccaga	tgggttcttc	tcaaattgaga	cgtcatctaa	agcaccctgt	480
agaaaacaca	caaattgcag	tgtcttttgt	ctcctgtctaa	ctcagaaaag	aaatgcaaca	540
cacgacaaca	tatgttccgg	aaacagtga	tcaactcaaa	aatgtggaat	agatgttacc	600
ctgtgtgagg	aggcattctt	caggtttgct	gttcttataa	agtttacgcc	taactggctt	660
agtgtcttgg	tagacaattt	gcctggcacc	aaagtaaacg	cagagagtgt	agagaggata	720
aaacggcaac	acagctcaca	agaacagact	ttccagctgc	tgaagttatg	gaaacatcaa	780
aacaaagacc	aagatatagt	caagaagatc	atccaagata	ttgacctctg	tgaaaacagc	840

```

gtgcagcggc acattggaca tgctaacctc accttcgagc agcttcgtag cttgatggaa 900
agcttaccgg gaaagaaagt gggagcagaa gacattgaaa aaacaataaa ggcattgcaaa 960
cccagtgacc agatcctgaa gctgctcagt ttgtggcgaa taaaaaatgg cgaccaagac 1020
accttgaagg gcctaattgca cgactaaag cactcaaaga cgtaccactt tcccaaaact 1080
gtcactcaga gtctaaagaa gaccatcagg ttcttcaca gcttcacaat gtacaaattg 1140
tatcagaagt tatttttaga aatgataggt aaccaggtcc aatcagtaaa aataagctgc 1200
ttataa 1206

```

```

<210> 3
<211> 401
<212> PRT
<213> Homo sapiens

```

```

<400> 3

```

```

Met Asn Lys Leu Leu Cys Cys Ala Leu Val Phe Leu Asp Ile Ser Ile
1      5      10      15
Lys Trp Thr Thr Gln Glu Thr Phe Pro Pro Lys Tyr Leu His Tyr Asp
20      25      30
Glu Glu Thr Ser His Gln Leu Leu Cys Asp Lys Cys Pro Pro Gly Thr
35      40      45
Tyr Leu Lys Gln His Cys Thr Ala Lys Trp Lys Thr Val Cys Ala Pro
50      55      60
Cys Pro Asp His Tyr Tyr Thr Asp Ser Trp His Thr Ser Asp Glu Cys
65      70      75      80
Leu Tyr Cys Ser Pro Val Cys Lys Glu Leu Gln Tyr Val Lys Gln Glu
85      90      95
Cys Asn Arg Thr His Asn Arg Val Cys Glu Cys Lys Glu Gly Arg Tyr
100      105      110
Leu Glu Ile Glu Phe Cys Leu Lys His Arg Ser Cys Pro Pro Gly Phe
115      120      125
Gly Val Val Gln Ala Gly Thr Pro Glu Arg Asn Thr Val Cys Lys Arg
130      135      140
Cys Pro Asp Gly Phe Phe Ser Asn Glu Thr Ser Ser Lys Ala Pro Cys
145      150      155      160
Arg Lys His Thr Asn Cys Ser Val Phe Gly Leu Leu Leu Thr Gln Lys
165      170      175
Gly Asn Ala Thr His Asp Asn Ile Cys Ser Gly Asn Ser Glu Ser Thr
180      185      190
Gln Lys Cys Gly Ile Asp Val Thr Leu Cys Glu Glu Ala Phe Phe Arg
195      200      205
Phe Ala Val Pro Thr Lys Phe Thr Pro Asn Trp Leu Ser Val Leu Val
210      215      220
Asp Asn Leu Pro Gly Thr Lys Val Asn Ala Glu Ser Val Glu Arg Ile
225      230      235      240
Lys Arg Gln His Ser Ser Gln Glu Gln Thr Phe Gln Leu Leu Lys Leu
245      250      255
Trp Lys His Gln Asn Lys Asp Gln Asp Ile Val Lys Lys Ile Ile Gln
260      265      270
Asp Ile Asp Leu Cys Glu Asn Ser Val Gln Arg His Ile Gly His Ala
275      280      285
Asn Leu Thr Phe Glu Gln Leu Arg Ser Leu Met Glu Ser Leu Pro Gly
290      295      300
Lys Lys Val Gly Ala Glu Asp Ile Glu Lys Thr Ile Lys Ala Cys Lys
305      310      315      320
Pro Ser Asp Gln Ile Leu Lys Leu Leu Ser Leu Trp Arg Ile Lys Asn

```

				325					330					335					
Gly	Asp	Gln	Asp	Thr	Leu	Lys	Gly	Leu	Met	His	Ala	Leu	Lys	His	Ser				
			340					345					350						
Lys	Thr	Tyr	His	Phe	Pro	Lys	Thr	Val	Thr	Gln	Ser	Leu	Lys	Lys	Thr				
		355					360					365							
Ile	Arg	Phe	Leu	His	Ser	Phe	Thr	Met	Tyr	Lys	Leu	Tyr	Gln	Lys	Leu				
	370					375					380								
Phe	Leu	Glu	Met	Ile	Gly	Asn	Gln	Val	Gln	Ser	Val	Lys	Ile	Ser	Cys				
385					390					395					400				

Leu

<210> 4
 <211> 15
 <212> DNA
 <213> Homo sapiens

<400> 4
 gatcttgkct ggatc 15

<210> 5
 <211> 15
 <212> DNA
 <213> Homo sapiens

<400> 5
 ccaccgcycac acccc 15

<210> 6
 <211> 15
 <212> DNA
 <213> Homo sapiens

<400> 6
 tccctggkkgg atcct 15

<210> 7
 <211> 15
 <212> DNA
 <213> Homo sapiens

<400> 7
 gcgttaaycc tggag 15

<210> 8
 <211> 15
 <212> DNA
 <213> Homo sapiens

<400> 8
 cctgggcycag ccgac 15

<210> 9
 <211> 15
 <212> DNA
 <213> Homo sapiens

<400> 9	15
gggagaargc tccac	
<210> 10	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 10	15
ccttttamgc tgcaa	
<210> 11	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 11	15
gctggtaygt gtcaa	
<210> 12	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 12	15
aggaccaytg ctcag	
<210> 13	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 13	15
aacataayag tagca	
<210> 14	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 14	15
tattttcygt aggaa	
<210> 15	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 15	15
cattttarca tattt	
<210> 16	
<211> 15	
<212> DNA	
<213> Homo sapiens	

10044674.010902

<400> 16 aagtaaaygc agaga	15
<210> 17 <211> 15 <212> DNA <213> Homo sapiens	
<400> 17 agaggatraa acggc	15
<210> 18 <211> 15 <212> DNA <213> Homo sapiens	
<400> 18 tgaagttrtg gaaac	15
<210> 19 <211> 15 <212> DNA <213> Homo sapiens	
<400> 19 gtatgatmat ctaaa	15
<210> 20 <211> 15 <212> DNA <213> Homo sapiens	
<400> 20 aaacagcrtg cagCg	15
<210> 21 <211> 15 <212> DNA <213> Homo sapiens	
<400> 21 tcagaagya ttttt	15
<210> 22 <211> 15 <212> DNA <213> Homo Sapiens	
<400> 22 cgtcggatc ttgkc	15
<210> 23 <211> 15 <212> DNA <213> Homo sapiens	

<400> 23	15
gagtcgatc cagmc	
<210> 24	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 24	15
cagacaccac cgcyc	
<210> 25	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 25	15
gcgtgagggg tggrg	
<210> 26	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 26	15
cccacctccc tggkg	
<210> 27	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 27	15
gcggaaagga tccmc	
<210> 28	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 28	15
ctgaaagcgt taayc	
<210> 29	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 29	15
agaaagctcc aggrt	
<210> 30	
<211> 15	
<212> DNA	
<213> Homo Sapiens	

<400> 30	
taagtcctg ggcy	15
<210> 31	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 31	
gcacccgtcg gctrg	15
<210> 32	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 32	
ccggcgggga gaarg	15
<210> 33	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 33	
gagcgagtgg agcyt	15
<210> 34	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 34	
gggtgtcctt ttamg	15
<210> 35	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 35	
ggaactttgc agckt	15
<210> 36	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 36	
gtgcaagctg gtayg	15
<210> 37	
<211> 15	
<212> DNA	
<213> Homo sapiens	

<400> 37	
tgcacattga cacrt	15
<210> 38	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 38	
ttccaaagga ccayt	15
<210> 39	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 39	
attcctctga gcart	15
<210> 40	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 40	
ttgtgcaaca taaya	15
<210> 41	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 41	
ttttactgct actrt	15
<210> 42	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 42	
gcttggtatt ttcyg	15
<210> 43	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 43	
ctggggttcc tacrg	15
<210> 44	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 44	

actttgcatt ttarc	15
<210> 45	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 45	
aagataaaat atgyt	15
<210> 46	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 46	
gcaccaaagt aaayg	15
<210> 47	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 47	
ctacactctc tgcrt	15
<210> 48	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 48	
gtgtagagag gatra	15
<210> 49	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 49	
tgtgttgccg tttya	15
<210> 50	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 50	
agctgctgaa gttrt	15
<210> 51	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 51	

tttgatgttt ccaya	15
<210> 52	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 52	
tccaaggtat gatma	15
<210> 53	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 53	
ttttatttta gatka	15
<210> 54	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 54	
ctgtgaaaac agcrt	15
<210> 55	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 55	
atgtgccgct gcayg	15
<210> 56	
<211> 15	
<212> DNA	
<213> Homo Sapiens	
<400> 56	
attgtatcag aagyt	15
<210> 57	
<211> 15	
<212> DNA	
<213> Homo sapiens	
<400> 57	
atttctaaaa atarc	15
<210> 58	
<211> 10	
<212> DNA	
<213> Homo sapiens	
<400> 58	
ccggatcttg	10

<210> 59
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 59
 tccgatccag 10

<210> 60
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 60
 acaccaccgc 10

<210> 61
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 61
 tgaggggtgg 10

<210> 62
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 62
 acctccctgg 10

<210> 63
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 63
 gaaaggatcc 10

<210> 64
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 64
 aaagcgtaa 10

<210> 65
 <211> 10
 <212> DNA
 <213> Homo sapiens

<400> 65
 aagctccagg 10

<210>	66	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	66	10
	gtccctgggc	
<210>	67	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	67	10
	cccgtcggct	
<210>	68	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	68	10
	gcggggagaa	
<210>	69	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	69	10
	cgagtggagc	
<210>	70	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	70	10
	tgtcctttta	
<210>	71	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	71	10
	actttgcagc	
<210>	72	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	72	10
	caagctggta	
<210>	73	

<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	73	
	acattgacac	10
<210>	74	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	74	
	caaaggacca	10
<210>	75	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	75	
	cctctgagca	10
<210>	76	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	76	
	tgcaacataa	10
<210>	77	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	77	
	tactgctact	10
<210>	78	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	78	
	tggtattttc	10
<210>	79	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	79	
	gggttcctac	10
<210>	80	
<211>	10	

<212>	DNA	
<213>	Homo sapiens	
<400>	80	
	ttgcatttta	10
<210>	81	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	81	
	ataaaatatg	10
<210>	82	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	82	
	ccaaagtaaa	10
<210>	83	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	83	
	cactctctgc	10
<210>	84	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	84	
	tagagaggat	10
<210>	85	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	85	
	gttgccgttt	10
<210>	86	
<211>	10	
<212>	DNA	
<213>	Homo sapiens	
<400>	86	
	tgctgaagtt	10
<210>	87	
<211>	10	
<212>	DNA	

<213> Homo sapiens
<400> 87
gatgtttcca 10
<210> 88
<211> 10
<212> DNA
<213> Homo sapiens
<400> 88
aaggtatgat 10
<210> 89
<211> 10
<212> DNA
<213> Homo sapiens
<400> 89
tatttttagat 10
<210> 90
<211> 10
<212> DNA
<213> Homo sapiens
<400> 90
tgaaaacagc 10
<210> 91
<211> 10
<212> DNA
<213> Homo sapiens
<400> 91
tgccgctgca 10
<210> 92
<211> 10
<212> DNA
<213> Homo sapiens
<400> 92
gtatcagaag 10
<210> 93
<211> 10
<212> DNA
<213> Homo sapiens
<400> 93
tctaaaaata 10

<210> 94
 <211> 2280
 <212> DNA
 <213> Homo sapiens

<220>
 <221> allele
 <222> (30)..(30)
 <223> PS1: polymorphic base G or T

<220>
 <221> misc_feature
 <222> (61)..(120)
 <223> n's represent sequence between PS1and PS2

<220>
 <221> allele
 <222> (150)..(150)
 <223> PS2: polymorphic base C or T

<220>
 <221> misc_feature
 <222> (181)..(240)
 <223> n's represent sequence between PS2 and PS3

<220>
 <221> allele
 <222> (270)..(270)
 <223> PS3: polymorphic base G or T

<220>
 <221> misc_feature
 <222> (301)..(360)
 <223> n's represent sequence between PS3 and PS4

<220>
 <221> allele
 <222> (390)..(390)
 <223> PS4: polymorphic base T or C

<220>
 <221> misc_feature
 <222> (421)..(480)
 <223> n's represent sequence between PS4 and PS5

<220>
 <221> allele

<222> (510)..(510)
<223> PS5: polymorphic base G or C

<220>
<221> misc_feature
<222> (541)..(600)
<223> n's represent sequence between PS5 and PS6

<220>
<221> allele
<222> (630)..(630)
<223> PS6: polymorphic base C or T

<220>
<221> misc_feature
<222> (661)..(720)
<223> n's represent sequence between PS6 and PS7

<220>
<221> allele
<222> (750)..(750)
<223> PS7: polymorphic base G or A

<220>
<221> misc_feature
<222> (781)..(840)
<223> n's represent sequence between PS7 and PS8

<220>
<221> allele
<222> (870)..(870)
<223> PS8: polymorphic base C or A

<220>
<221> misc_feature
<222> (901)..(960)
<223> n's represent sequence between PS8 and PS9

<220>
<221> allele
<222> (990)..(990)
<223> PS9: polymorphic base C or T

<220>
<221> misc_feature
<222> (1021)..(1080)
<223> n's represent sequence between PS9 and PS10

<220>
 <221> allele
 <222> (1110)..(1110)
 <223> PS10: polymorphic base T or C

<220>
 <221> misc_feature
 <222> (1141)..(1200)
 <223> n's represent sequence between PS10 and PS11

<220>
 <221> allele
 <222> (1230)..(1230)
 <223> PS11: polymorphic base T or C

<220>
 <221> misc_feature
 <222> (1261)..(1320)
 <223> n's represent sequence between PS11 and PS12

<220>
 <221> allele
 <222> (1350)..(1350)
 <223> PS12: polymorphic base C or T

<220>
 <221> misc_feature
 <222> (1381)..(1440)
 <223> n's represent sequence between PS12 and PS13

<220>
 <221> allele
 <222> (1470)..(1470)
 <223> PS13: polymorphic base G or A

<220>
 <221> misc_feature
 <222> (1501)..(1560)
 <223> n's represent sequence between PS13 and PS14

<220>
 <221> allele
 <222> (1590)..(1590)
 <223> PS14: polymorphic base C or T

<220>
 <221> misc_feature

<222> (1621)..(1680)
<223> 's represent sequence between PS14 and PS15

<220>
<221> allele
<222> (1710)..(1710)
<223> PS15: polymorphic base A or G

<220>
<221> misc_feature
<222> (1741)..(1800)
<223> n's represent sequence between PS15 and PS16

<220>
<221> allele
<222> (1830)..(1830)
<223> PS16: polymorphic base A or G

<220>
<221> misc_feature
<222> (1861)..(1920)
<223> n's represent sequence between PS16 and PS17

<220>
<221> allele
<222> (1950)..(1950)
<223> PS17: polymorphic base A or C

<220>
<221> misc_feature
<222> (1981)..(2040)
<223> n's represent sequence between PS17 and PS18

<220>
<221> allele
<222> (2070)..(2070)
<223> PS18: polymorphic base G or A

<220>
<221> misc_feature
<222> (2101)..(2160)
<223> n's represent sequence between PS18 and PS19

<220>
<221> allele
<222> (2190)..(2190)
<223> PS19: polymorphic base T or C

<220>
<221> misc_feature
<222> (2221)..(2280)
<223> n's represent sequence 3' to PS19

<400> 94

ggacacactc	caactgcgctc	cggatcttgk	ctggatcgga	ctctcaggg	ggaggagaca	60
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	120
ctgctctccc	aggggacaga	caccaccgcy	ccacccctca	cgccccacct	ccctggggga	180
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	240
gccccacccc	tcacgcccc	cctccctggk	ggatcctttc	cgccccagcc	ctgaaagcgt	300
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	360
cctttccgcc	ccagccctga	aagcgttaay	cctggagctt	tctgcacacc	ccccgaccgc	420
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	480
ctgaggtttc	cggggaccac	aatgaacaas	ttgctgtget	gcgcgctcgt	ggtaagtccc	540
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	600
tgctgcgcgc	tcgtggttaag	tccttgggcy	agccgacggg	tgcccggcgc	ctggggaggc	660
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	720
ccaacctccc	agcggaccgg	cggggagaar	gctccactcg	ctccctccca	ggagaggcct	780
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	840
tgccatgctt	cccctaggg	gtccttttam	gctgcaaat	tcctgctgac	tttatggaag	900
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	960
tcctggattt	ggagtgggtc	aagctgggtay	gtgtcaatgt	gcagcaaat	taattaggat	1020
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1080
tatgtgtctg	gagtgcctcc	aaaggaccay	tgctcagagg	aatactttgc	cactacagg	1140
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1200
tgaaaatgct	agagttttgt	gcaacataay	agtagcagta	aaaaccaagt	gaaaagtctt	1260
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1320
gagaaggtac	taaattgctt	ggtattttcy	gtaggaacc	cagagcgaaa	tacagtttgc	1380
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1440
gcttgatttt	attcaaaact	tgcattttar	catattttat	cttggaat	tcaattgtgt	1500
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1560
gtagacaatt	tgcttggcac	caaagtaaay	gcagagagt	tagagaggat	aaaacggcaa	1620
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1680
aaagtaaacg	cagagagtgt	agagaggatr	aaacggcaac	acagctcaca	agaacagact	1740
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1800
caagaacaga	ctttccagct	gctgaagttr	tggaaacatc	aaaacaaaga	ccaagatata	1860
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	1920
atagtcaaga	agatcatcca	aggtatgatm	atctaaaata	aaaagatcaa	tcagaaatca	1980
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	2040
atgcagatat	tgacctctgt	gaaaacagcr	tgacgcggca	cattggacat	gctaacctca	2100
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	2160
gcttcacaat	gtacaaattg	tatcagaagy	tatttttaga	aatgataggt	aaccaggtcc	2220
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	2280